

CLAIMS

1. In a wireless communication system supporting Internet Protocol communications, a method comprising:
 - receiving an IP packet having a destination IP address and a Network Access Identifier (NAI);
 - determining a Network Address Translator (NAT) corresponding to the NAI;
 - determining a port number associated with the NAT and the NAI, the NAT having an NAT IP address;
 - converting the destination IP address and the NAI to the NAT IP address and the port number; and
 - directing the IP packet to the NAT IP address.
2. The method as in claim 1, further comprising:
 - receiving a Session Initiation Protocol (SIP) registration from a mobile station;
 - processing IP packets for the mobile station through the gateway using NAT and NAI.
3. A wireless communication apparatus supporting Internet Protocol communications, comprising:
 - means for receiving an IP packet having a destination IP address and a Network Access Identifier (NAI);
 - means for determining a Network Address Translator (NAT) corresponding to the NAI;
 - means for determining a port number associated with the NAT and the NAI, the NAT having an NAT IP address;
 - means for converting the destination IP address and the NAI to the NAT IP address and the port number; and
 - means for directing the IP packet to the NAT IP address.

4. A gateway in a wireless communication system supporting Internet Protocol (IP) communications, comprising:
 - Network Access Identifier (NAI) processing unit, adapted to identify a first mobile station by a NAI associated with the first mobile station;
 - and
 - translation map coupled to the NAI processing unit, adapted to store a mapping of the NAI to a Network Address Translator (NAT) and a port number to identify the first mobile station.
5. The gateway as in claim 4, further comprising:
 - IP packet processing unit coupled to the translation map, providing IP packets to the translation map,wherein the mapping stored in the translation map is applied to address the first mobile station.
6. The gateway as in claim 4, wherein the gateway is a PUSH gateway.
7. The gateway as in claim 4, wherein the NAI processing unit receives a Session Initiation Protocol (SIP) registration message from the first mobile station, and in response determines the mapping of the NAI to the NAT and port number.
8. The gateway as in claim 7, wherein the translation map stores an updated mapping when the first mobile station moves to a different NAT and sends an SIP registration.
9. The gateway as in claim 4, wherein the translation map is further adapted to provide addressing to the first mobile station.
10. The gateway as in claim 8, wherein the gateway changes a destination address for the first mobile station based on the port number.
11. The gateway as in claim 4, wherein the first mobile station is located within the NAT.

12. The gateway as in claim 11, wherein the first mobile station is identified with the NAT by the port number.
13. The gateway as in claim 4, wherein the NAI is an Ipv4 address.
14. The gateway as in claim 4, wherein the translation map comprises a memory storage device.
15. An apparatus in a wireless communication system supporting Internet Protocol (IP) communications, comprising:
 - means for identifying a first user based on a Network Access Identifier (NAI); and
 - means for mapping the NAI of the first user to a Network Address Translator (NAT) within which the first user is located, and a port number within the NAT that identifies the first user.
16. The apparatus as in claim 15, further comprising:
 - means for addressing packets to the first user based on the NAT and the port number.
17. In a wireless communication system supporting Internet Protocol (IP) communications, a method for communicating an IP packet to a target recipient, the method comprising:
 - forming a destination address for the IP packet to the target recipient, the target recipient within a Network Address Translator (NAT) zone, the NAT zone served by a gateway, the address comprising a Network Access Identifier (NAI) of the target recipient and a gateway identifier of a gateway on a transmission path to the target recipient; and
 - translating the destination address to an updated destination address comprising an IP address of the NAT and a port number of the target recipient.

19. The apparatus as in claim 18, wherein the updated destination address is used to transmit the IP packet from the gateway to the NAT zone.

20. The apparatus as in claim 17, further comprising:
storing in the gateway a mapping of the NAI to the NAT and the port
number.